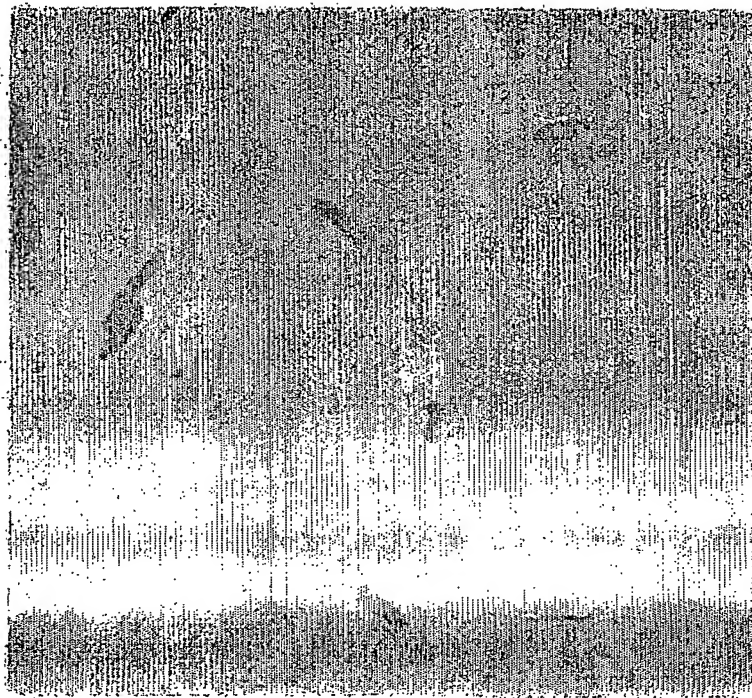


Fig. 1



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Fig. 2

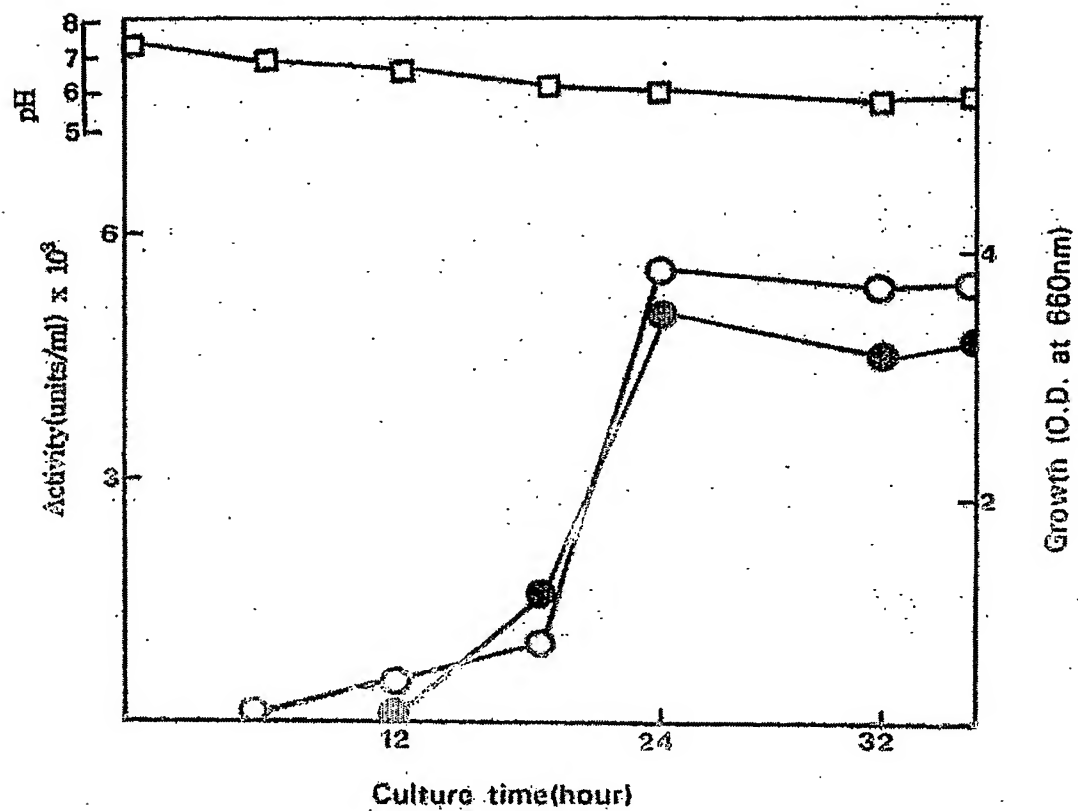


Fig. 3

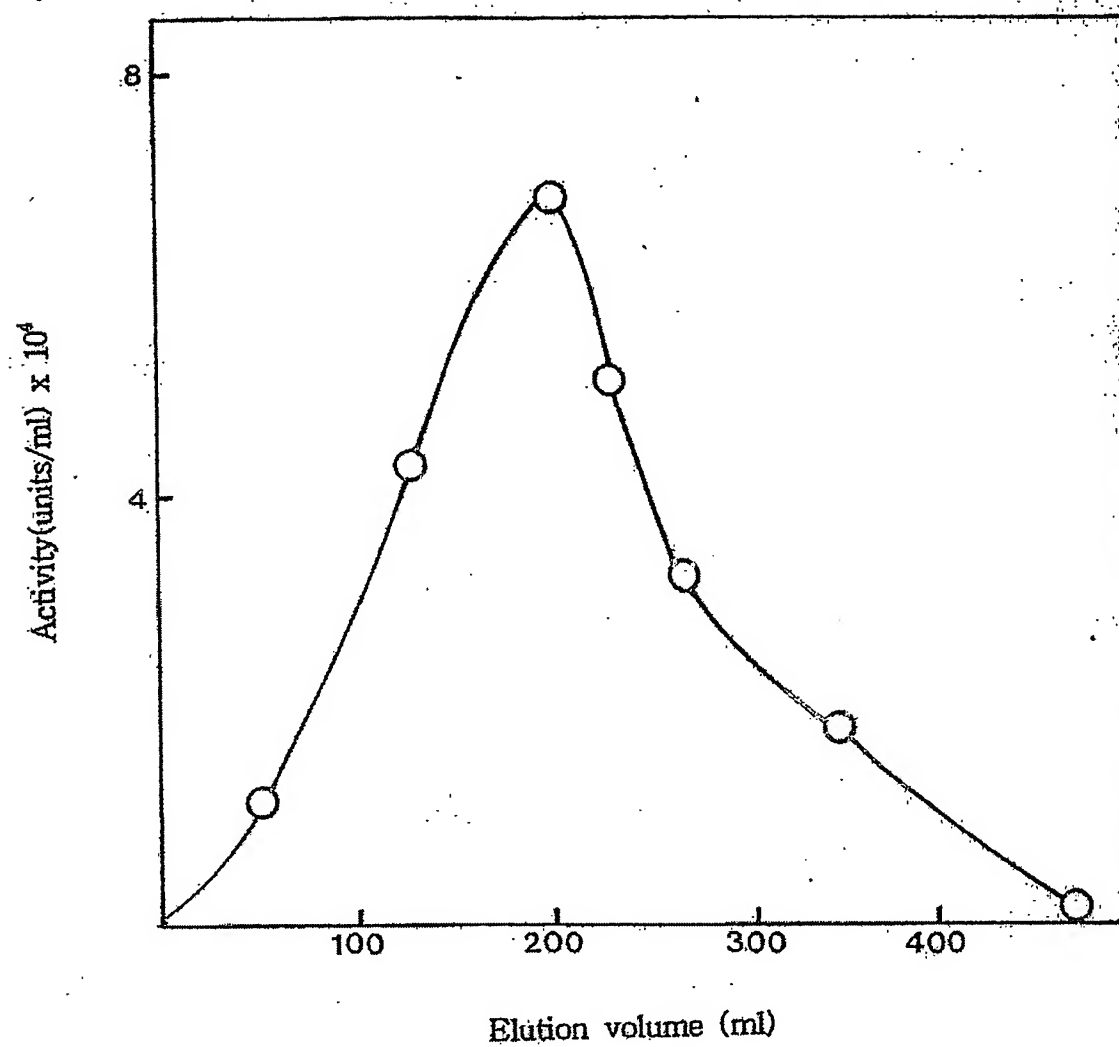


Fig. 4

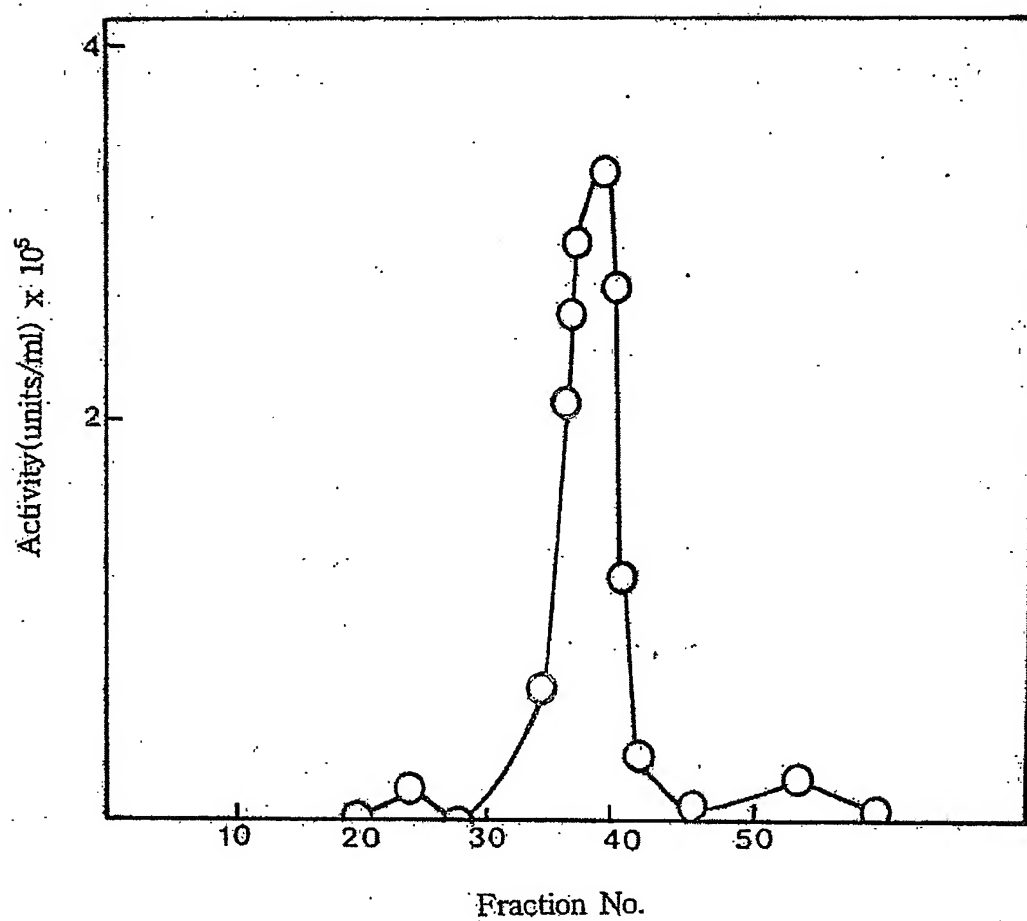


Fig. 5

|   | Vol.<br>(ml) | Total Activity<br>(units * 10 <sup>3</sup> ) | Yield<br>(%) |
|---|--------------|--|--------------|
| Culture Broth   |              |  |              |
| Collect Supernatant by Centrifugation   | 8,820        | 45,000                                       | 100          |
| Activated Charcoal Extraction   | 100          | 31,050                                       | 69           |
| Extract with 80%<br>Methanol concentrated<br>in Vacuum  |              |  |              |
| Methanol Fractionation  | 50           | 27,900                                       | 62           |
| Removal of Precipitate &<br>Methanol  |              |  |              |
| Dowex 1x1-100(Cl <sup>-</sup> )   | 50           | 23,100                                       | 51           |
| Washed with distilled<br>water  |              |  |              |
| Dowex 50W-X4(H <sup>+</sup> )   | 30           | 7,100  | 15           |
| Eluted with 0.2N NaOH,<br>Evaporated NH <sub>4</sub> OH   |              |  |              |
| Biogel P <sub>2</sub> Gel Filtration  | 10           | 2,250  | 5            |
| Eluted with milipore<br>water   |              |  |              |
| Reverse Phase TLC   | 2            | 1,507  | 3            |
| Develop with a developing<br>solution ( NH <sub>4</sub> OH:<br>C <sub>2</sub> H <sub>5</sub> OH:H <sub>2</sub> O=6:4:1) |              |  |              |
| Normal Phase TLC  | 2            | 1,020  | 2            |
| Develop with a developing<br>solution ( CHCl <sub>3</sub> :CH <sub>3</sub> OH<br>=7:3), Extract with<br>Methanol        |              |  |              |
| HPLC  |              |  |              |

Fig. 6

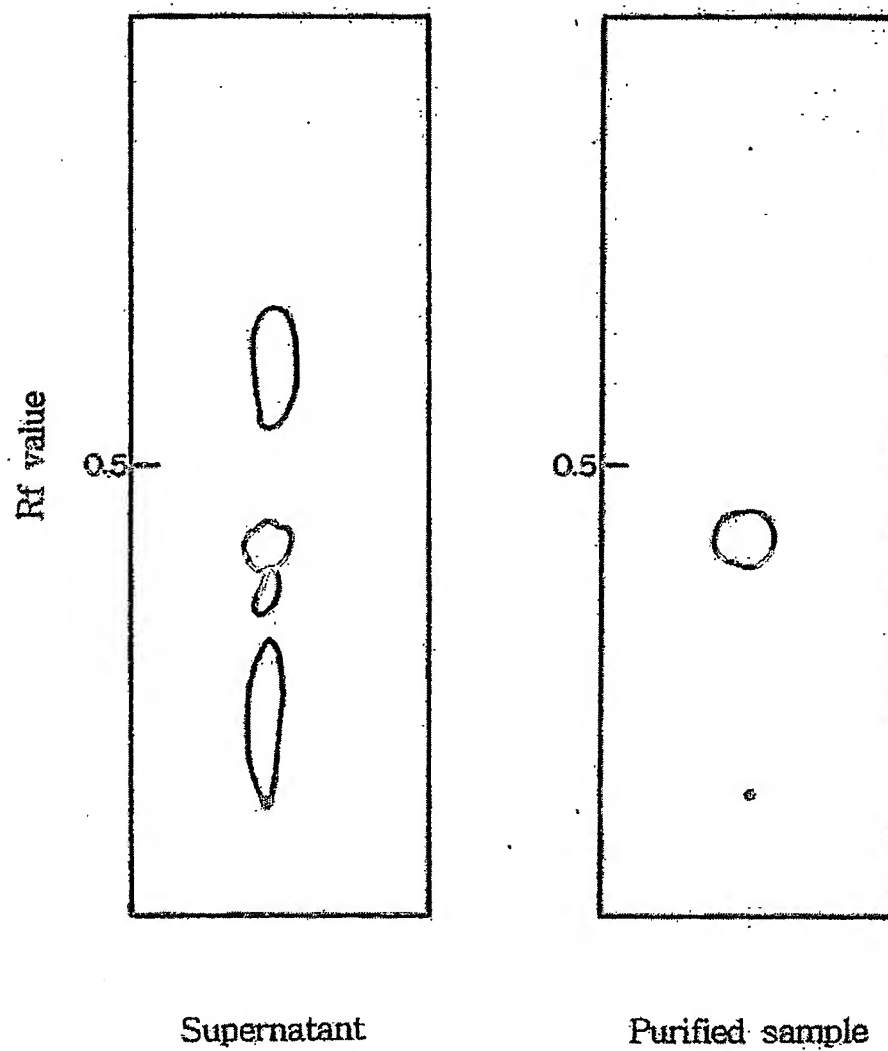


Fig. 7

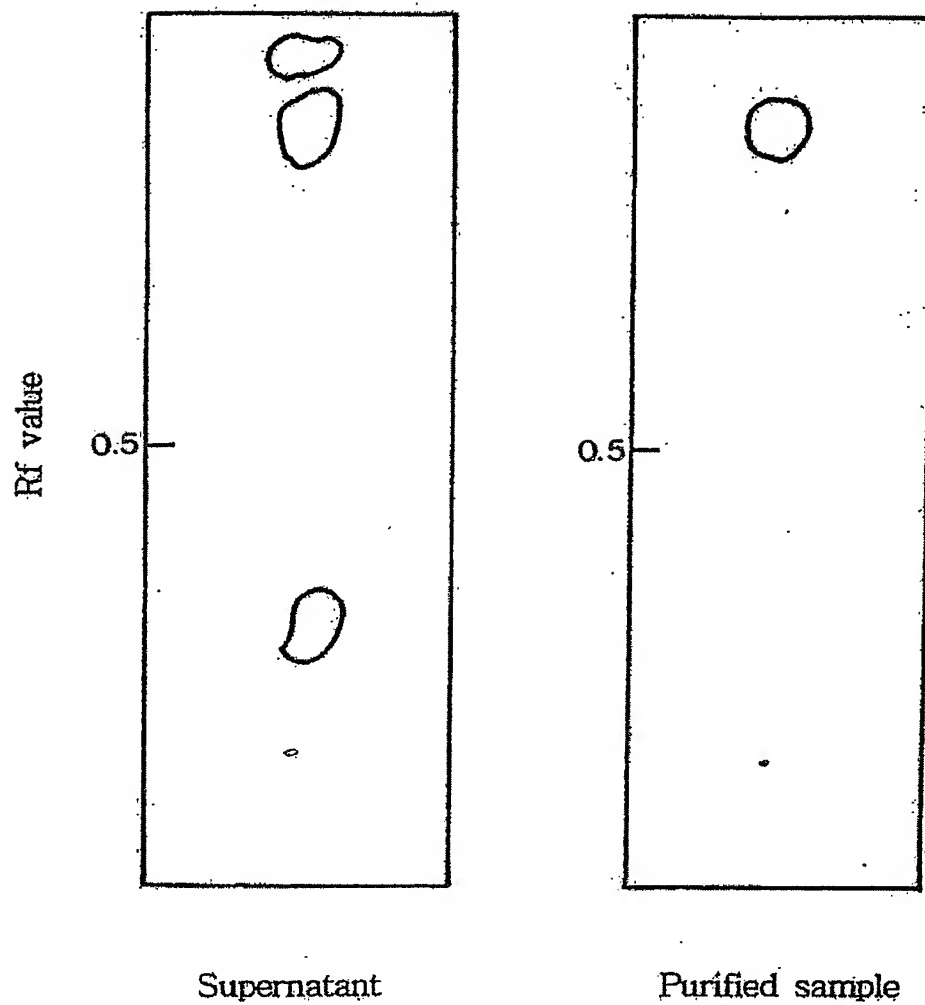


Fig. 8

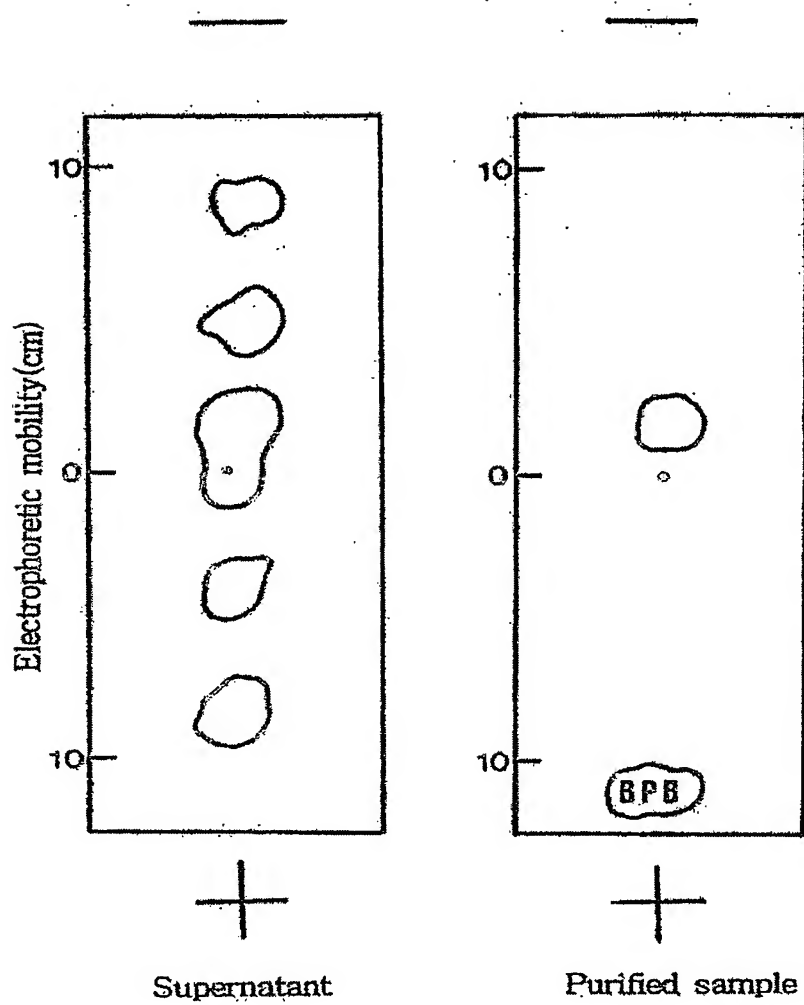


Fig. 9

0.00

CAL. METHOD 00

SF

PA

PB

1000000m+03 1000000m+01 1000000m+01

| NO.   | NAME | RT    | A OR H | MK | CONC     |
|-------|------|-------|--------|----|----------|
| 1     |      | 8.525 | 136697 |    | 100.0000 |
| TOTAL |      |       | 136697 |    | 100.0000 |

0.00

Fig. 10

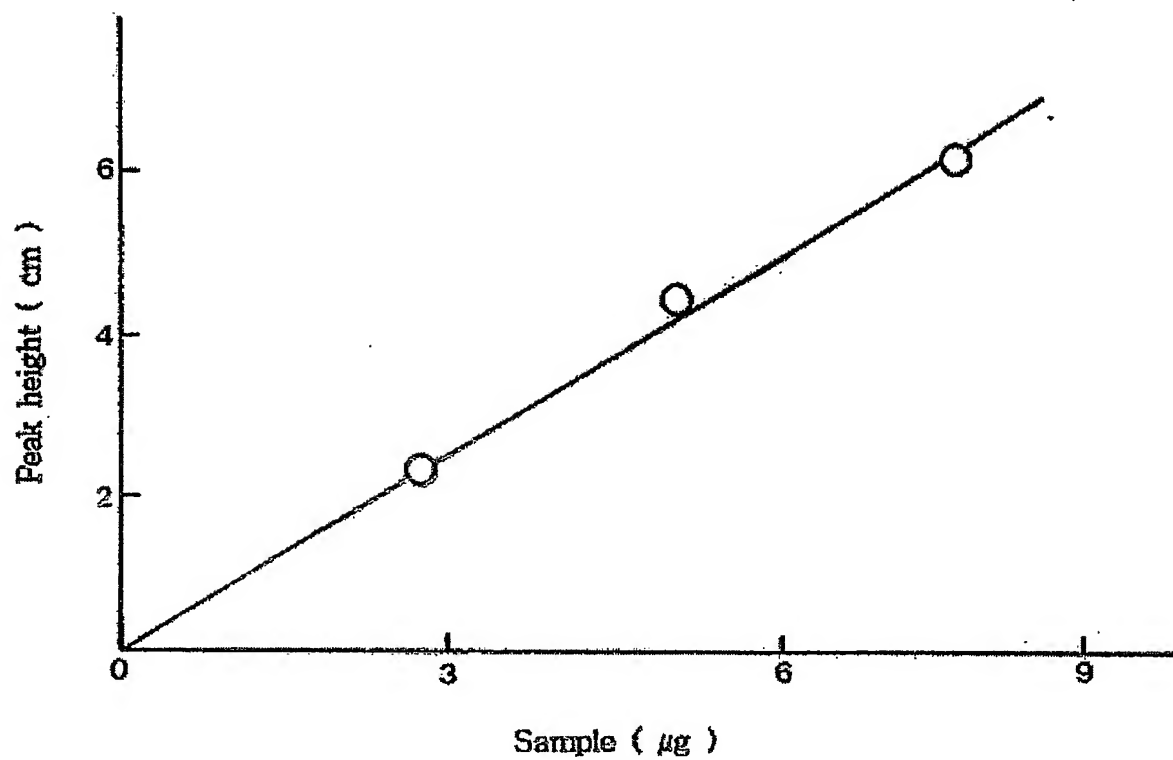


Fig. 11

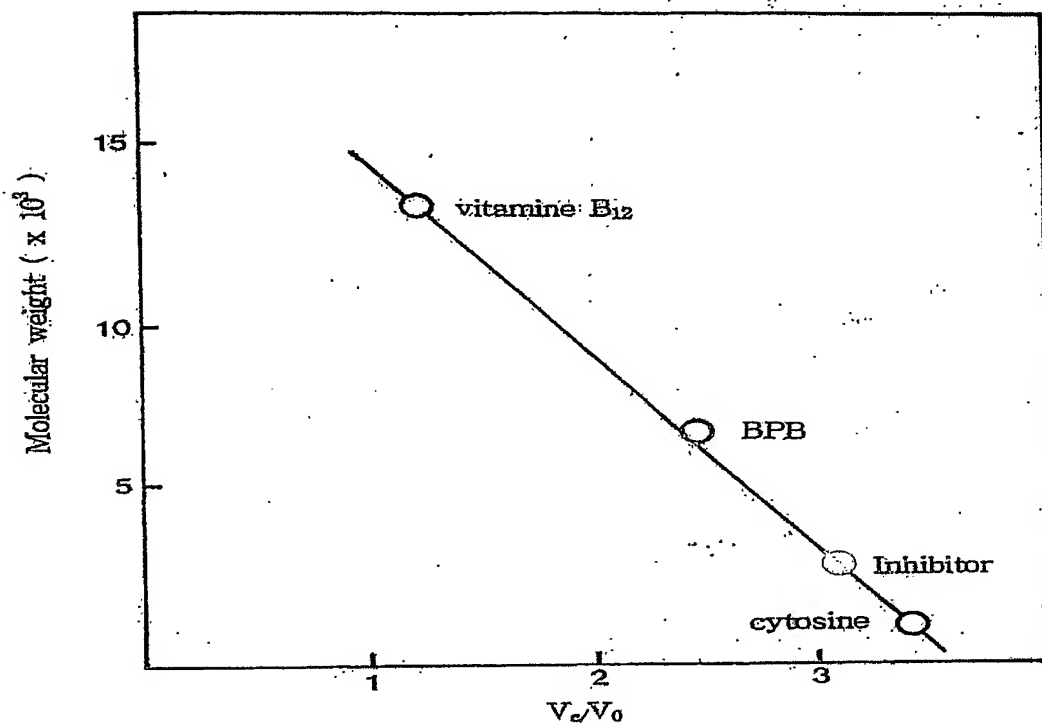


Fig. 12

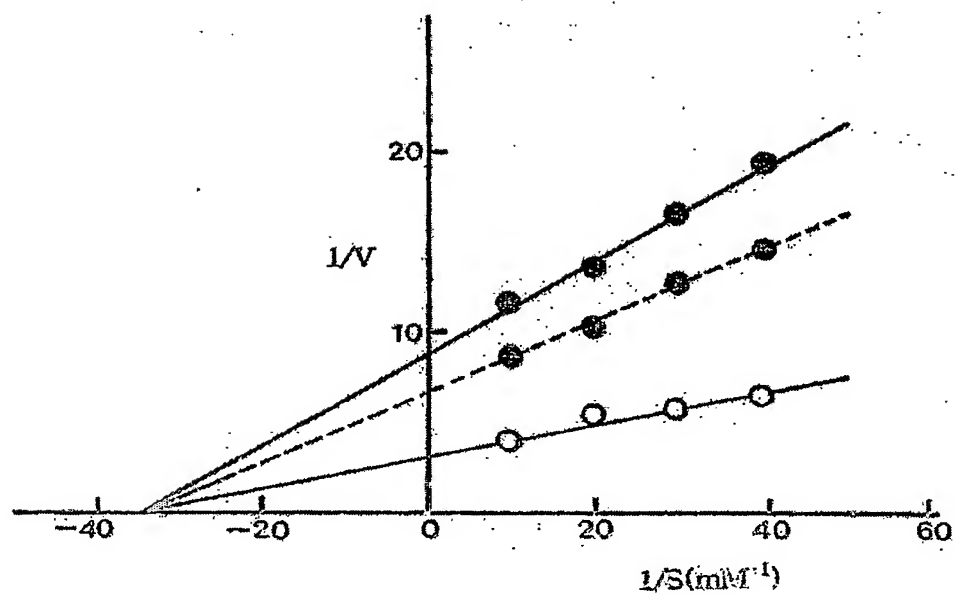


Fig. 13

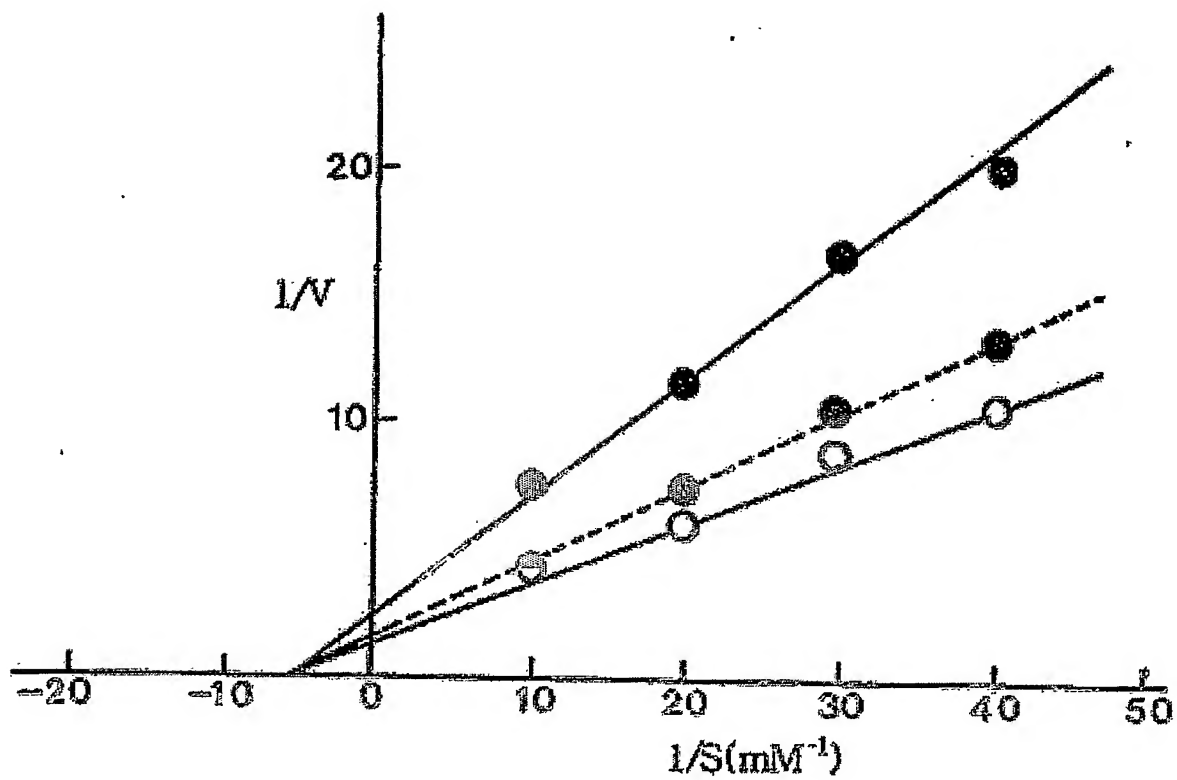


Fig. 14

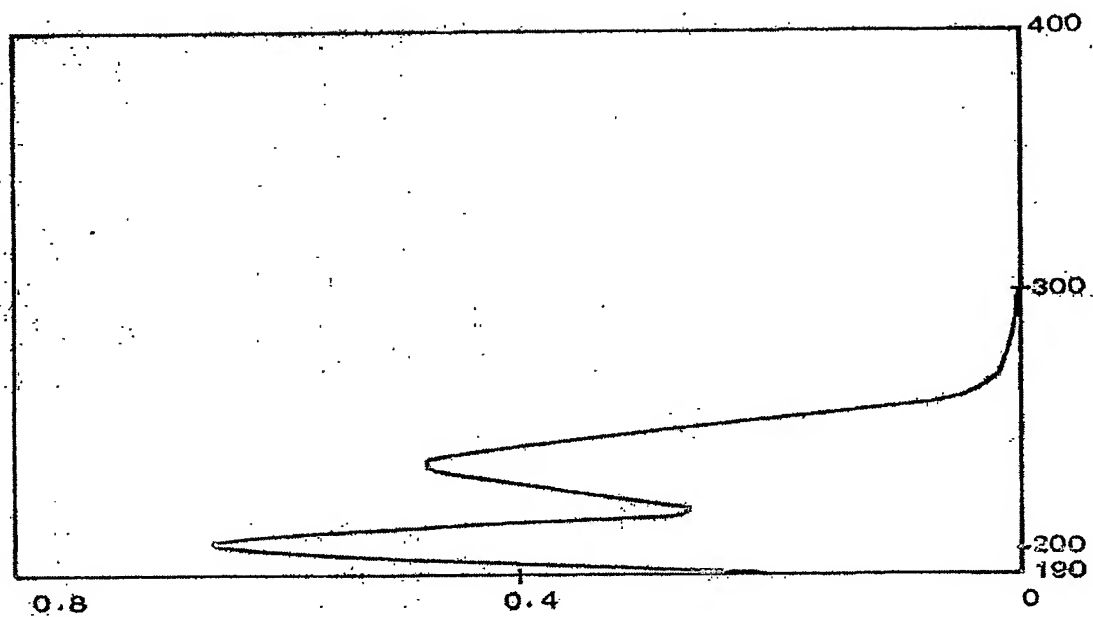


Fig. 15

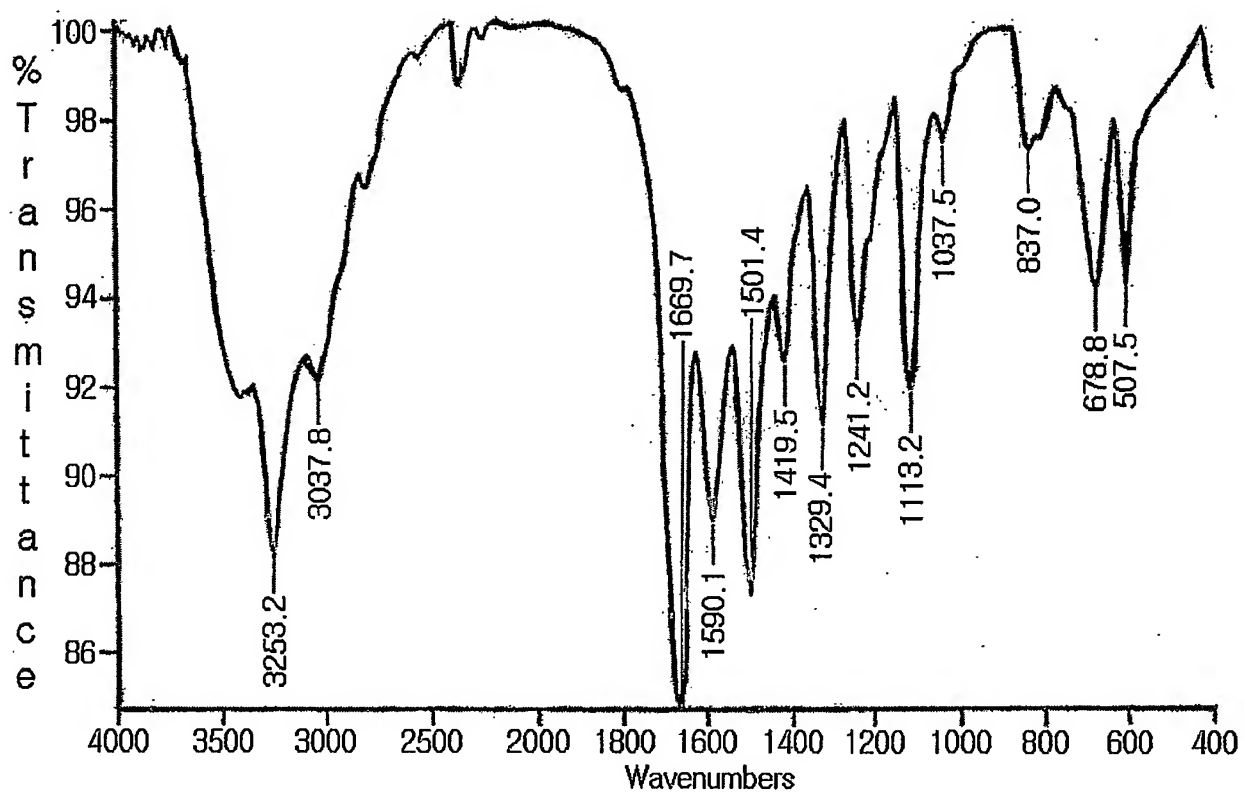


FIG. 16

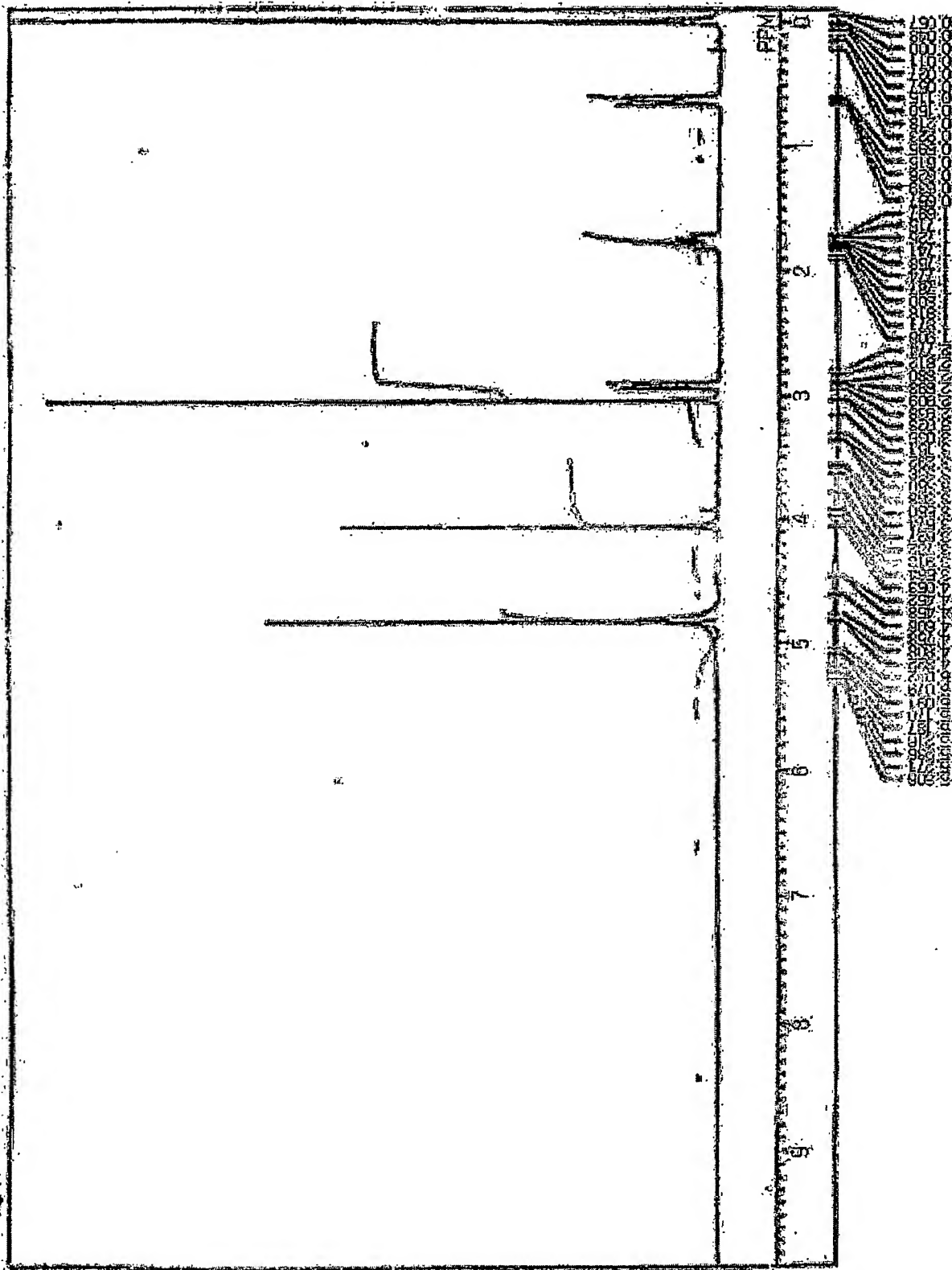


Fig. 17

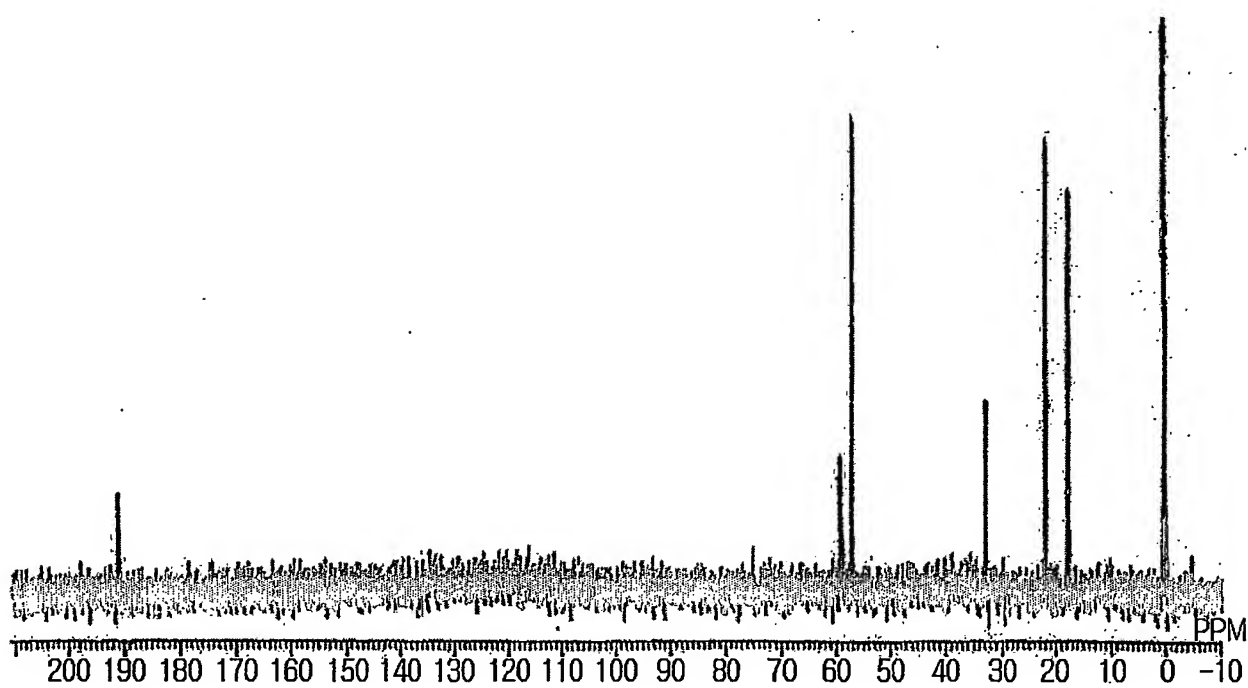


Fig. 18

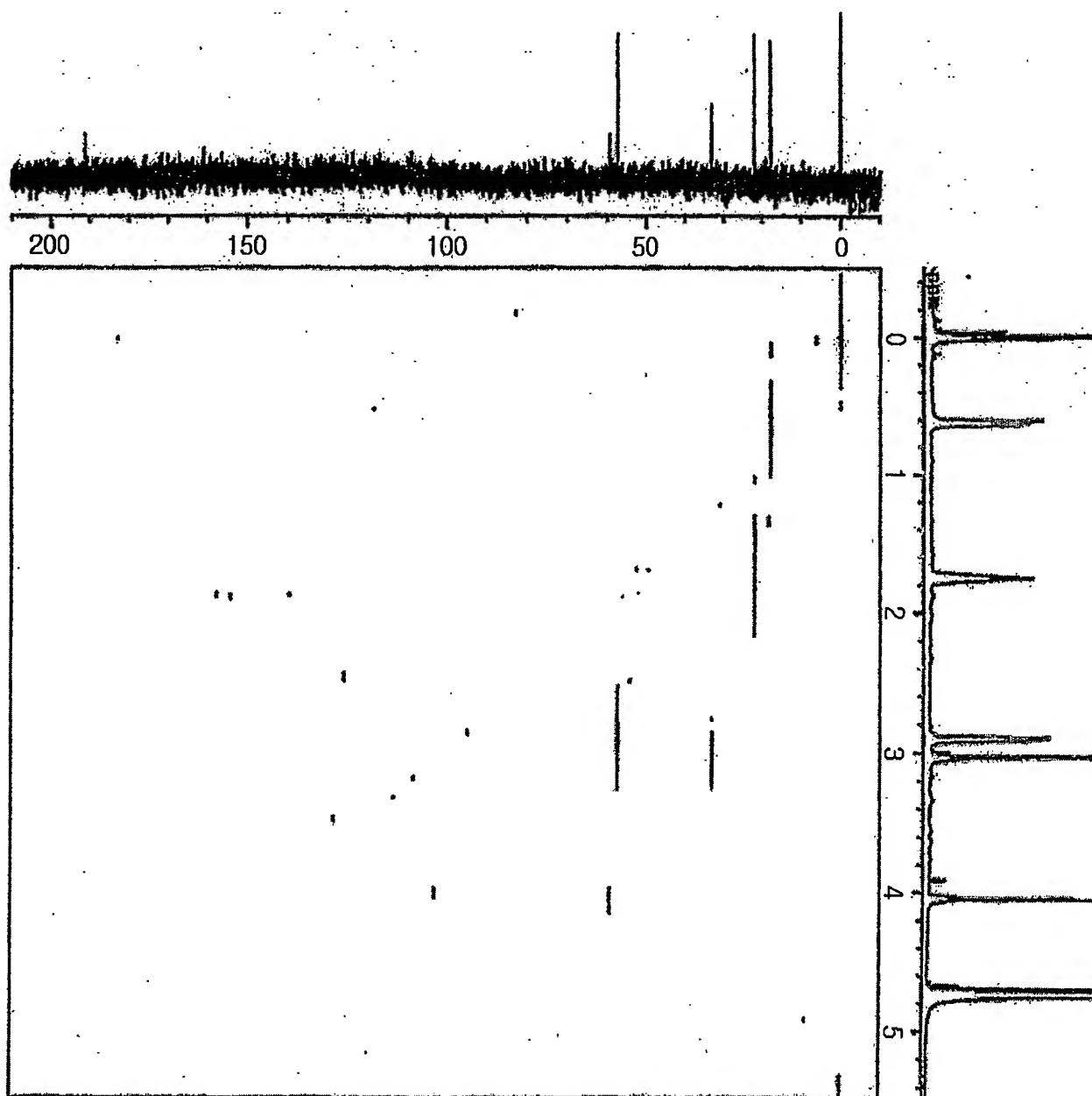


Fig. 19

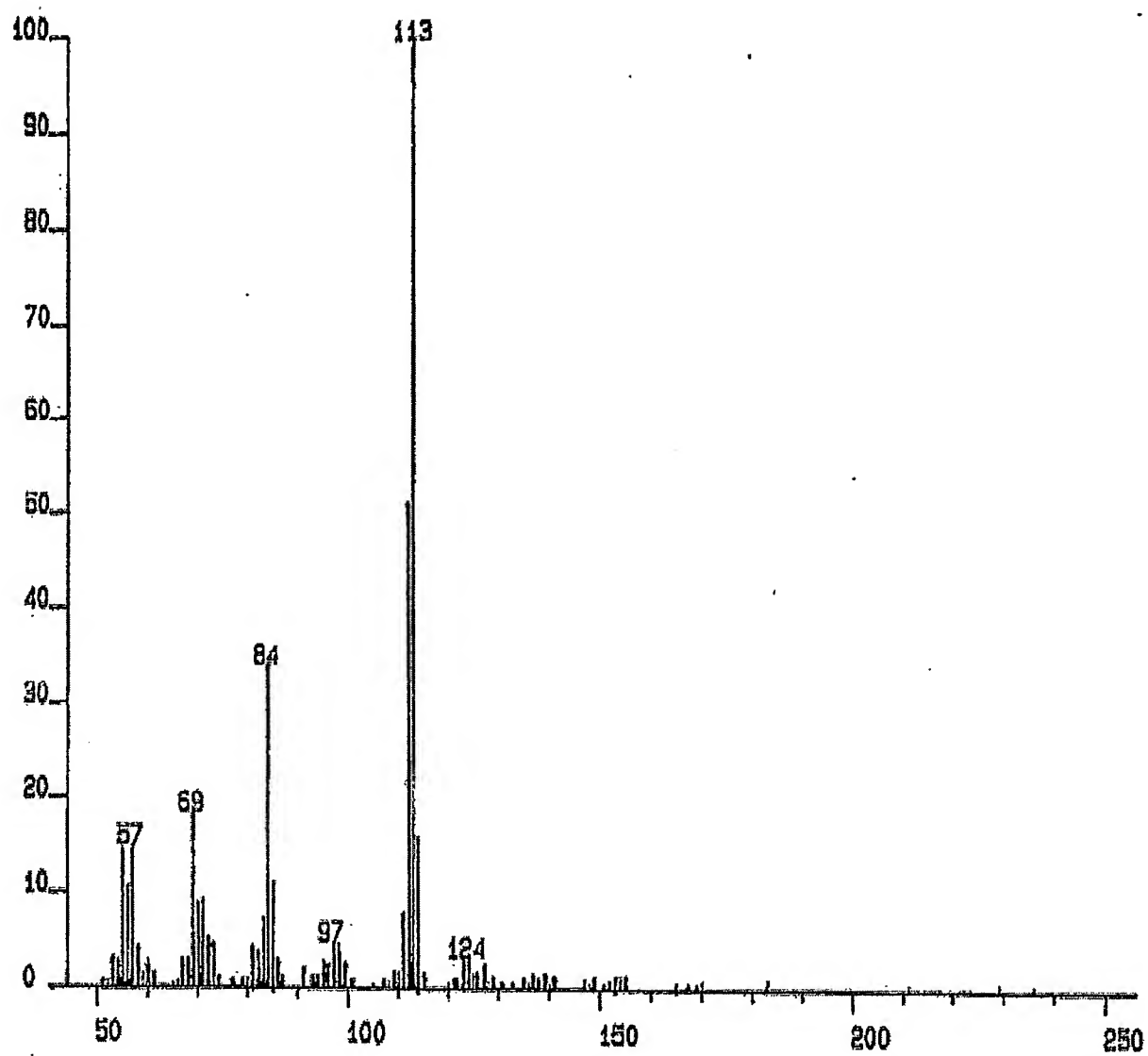


Fig. 20

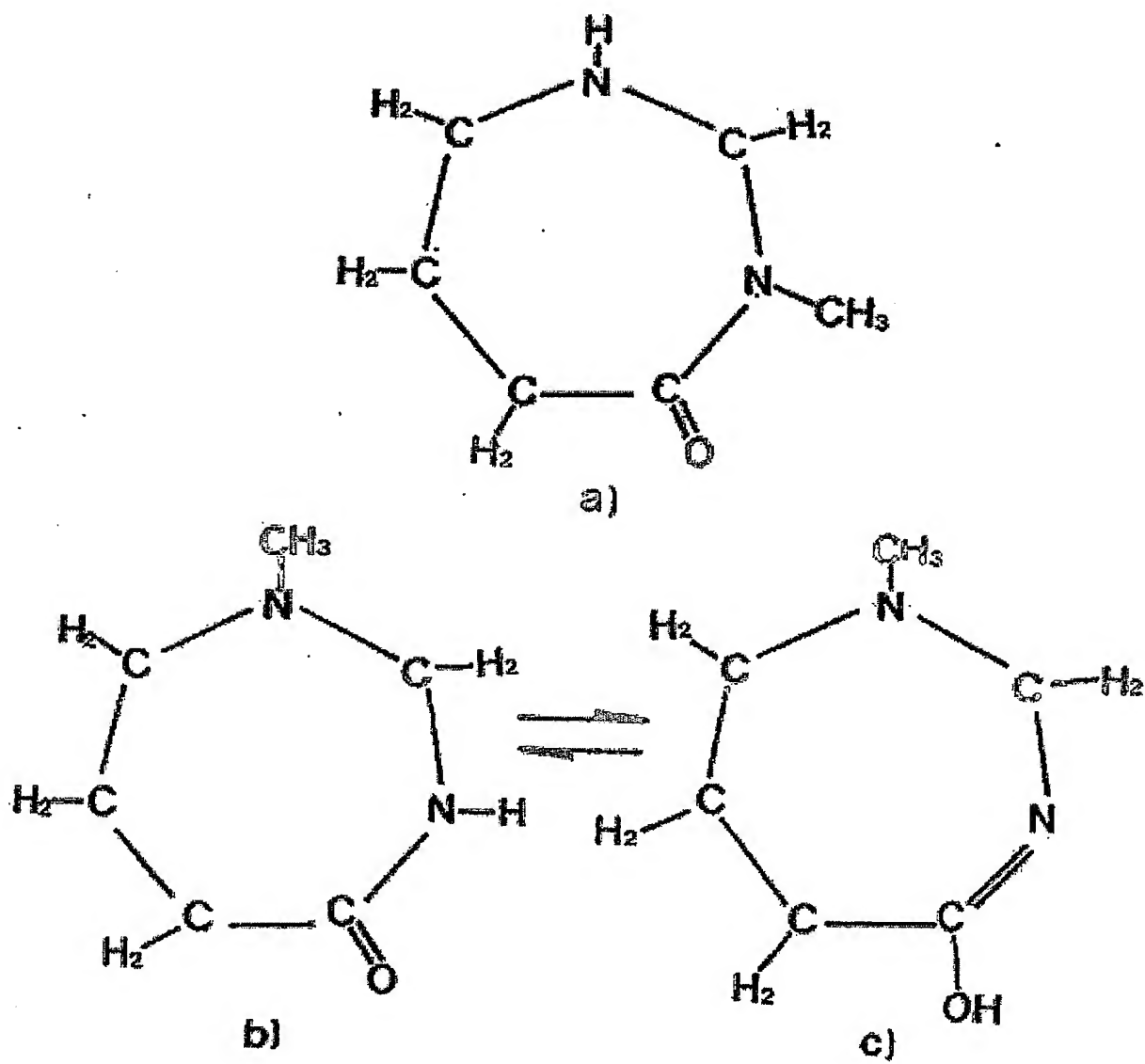
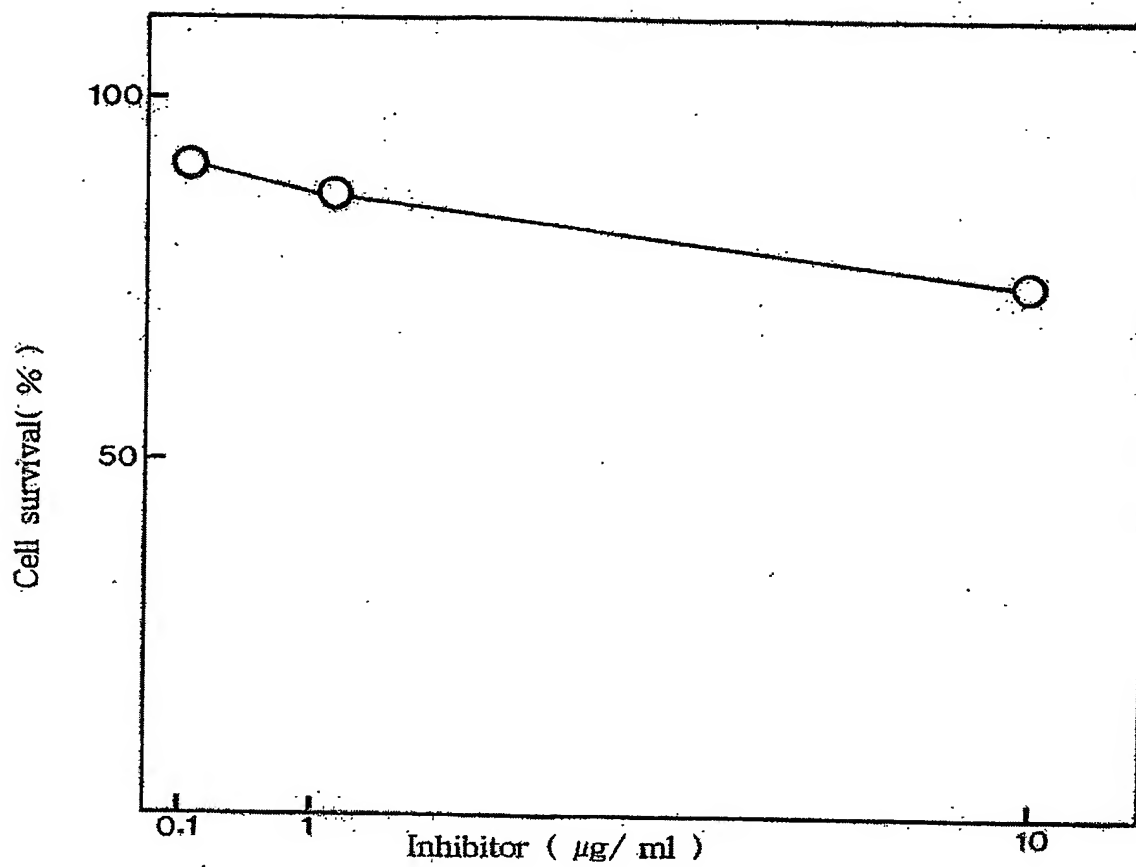


Fig. 21



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